WBA Broadcasters Clinic
2022

October 11-13
Madison Marriott West
#WBABBC22
WELCOME TO THE BROADCASTERS CLINIC

The primary goal of the Broadcasters Clinic is to bring together the very best in the industry.

We believe that our diverse and dynamic group of speakers, panelists, and exhibitors provide in-depth insight, as well as actionable and practical tools and life experiences, models, methods and mechanisms needed in today's broadcasting environment.
8:30 a.m. – A Practical Guide to Building a Virtualized Radio Station On-Premises or in the Cloud

*Kirk Harnack, Telos Alliance*

Some of the parts and pieces to build a virtualized radio station are available now. Indeed, some of these key functionalities have been around for a few years. Yet instantiating a working broadcast “facility” in a fully virtual environment has been elusive.

Prior to the pandemic we weren't particularly motivated to make this work. And, during the pandemic's lockdowns and social distancing we've been fully tasked to use what we already have. Now that we've experienced remote workflows it's time to see how fully virtualized broadcast infrastructure could be useful and beneficial to our operations.

This presentation will examine actual, working virtualized broadcast systems including automation playout, voice tracking, live to air, virtual mixing, multi-site and multi-talent signal and workflows, as well as audio processing, stream encoding, and studio-transmitter links. We'll gain understanding and confidence in these virtualized broadcast systems so they can be a solid option as we move forward in our broadcast workflows.

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9:15 a.m. – Radio Moves to the Cloud... Full-Time

*Jim Hammond, Radio.Cloud*

- We will discuss a high-level view of how playout in cloud-based environments for 24/7 operation is fundamentally different from converting a traditional system using some cloud services.
- The ease of interfacing with existing playout, music, and traffic systems for stations and networks that already have a solution for traditional operation in place.
- Leveraging machine learning to allow a staff to create content in a much more efficient manner and have a great sound.
- Flexibility to make changes at the last minute in a programming that has already been created.
- Giving networks the ability to serve affiliates with different imaging, music, news, and flexible length stopsets at the same time.

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10 a.m. – Cloud-Based Radio Broadcasting and the Last Mile Problem

*Mike Pappas, Orban Labs*

If the futurists are correct, the future of radio broadcast is “cloud-based.”

We all know that operating cloud-based automation and playout systems, along with audio processing, is a relatively easy project. But getting from the “Cloud” to an FM or AM transmitter site reliably, especially with last-mile issues of low bandwidth (or no bandwidth), is a significant issue.

Coupled with this issue are a few other technical challenges: How to handle RDS (with FM), deal with local EAS insertion, manage Nielsen encoding, sync analog FM and HD-1 while handling HD-2 to HD-6 along with supporting legacy transmitters. These are all significant challenges facing any broadcaster looking to make a move to the Cloud.

We will examine these issues and their potential solutions including IP delivery redundancy, very low bandwidth solutions, and ways to handle the other issues mentioned above - all of which can be accomplished now.

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10:45 a.m. – Break
11 a.m. – Overhauling Your FM+HD Network, Managing a Changing Environment

*Nick vanHaaster, GatesAir*

We will look at new technologies and services that incorporate tools to easily transition from aging infrastructure and equipment. We’ll also take a deeper look into how stations are utilizing things like web services and network rollouts. This presentation will outline the simple steps to rethink your FM or FM+HD distribution from studio to transmitter sites.

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11:45 a.m. – Cathodic Protection for Galvanized Guy Anchor Rods in Soil

*Roger Strand, Wisconsin ECB*

This presentation will cover the analysis, design, installation, and performance verification of cathodic protection systems located at several ECB tower sites.

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12:30 p.m. – Lunch

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1:30 p.m. – Ready or Not, Here it Comes! – Prepping for Virtualization

*Jeff Welton, Nautel*

Whether you’re all for augmented reality and can’t wait for autonomous everything or you think that running on ‘somebody else’s computer’ is the worst idea ever and rue the day that automation was invented, some level of virtualization will invariably happen in your facility sooner rather than later. In this session, we’ll discuss the concept, talk about general “safe practices” and point out the things that typically get overlooked, but are potentially more critical than ever before, when it comes to providing a quality, reliable signal.

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2:15 p.m. – Changing the Landscape of FM Broadcast Antenna Technology

*Nicole Starrett, Dielectric*

It has been many years since new game-changing technologies have been introduced in FM broadcast market. The many advantages of slotted coaxial pylon antenna technology that have benefitted the UHF and high band VHF broadcast community for decades can now be realized in the FM band. Those benefits include smaller size leading to low wind load, fewer parts and fewer connections leading to higher reliability and a high degree of both azimuth and elevation pattern flexibility. In most applications, the use of slotted coaxial antennas has been limited to single channel television operation. In this presentation, the use of slotted coaxial pylon antenna technology in the FM band is presented. Discussion includes the techniques used to increase the bandwidth of pylon technology producing a product capable of full FM band operation. In addition to pylon technologies being applied to FM broadcast, new FCC rule changes now permit directional FM antenna modeling to use computational methods which will allow FM broadcasters to transition from physical modeling to a more efficient, economical, and accurate computer simulated modeling procedure. To take full advantage of the ruling, AI-based innovations have been developed to fully automate the optimization of FM antenna geometries replacing slow trial and error range measurements. The scripts are not compromised by time or material constraints and provide solutions that are completely optimized. The AI simulation approach also eliminates inherent human and range measurement errors associated with traditional measurement techniques.

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3 p.m. – Break

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A UHF repeater available for use during the Broadcasters Clinic. The N9BDR repeater frequency is 444.375 MHz, with a PL of 123.0. All amateur operators are welcome. Please keep in mind that if there is severe weather, you should clear the repeater and let that traffic have priority. A special thanks to Ralph Pellegrini, N9BDR, for the use of his system.
3:15 p.m. – Advancing Radio Technology at NAB

David Layer, NAB

As a membership organization, NAB is governed by and works to serve its radio and TV broadcaster members in a variety of ways. The NAB Technology Department focuses on helping to advance radio and TV technology and on providing technical support to the other parts of NAB, in particular the Government Relations and Legal departments. In this presentation, David Layer will offer a glimpse into the recent radio activities of the Technology Department, highlighting the most interesting and relevant projects on the cutting edge of radio technology as well as the most impactful contributions on the regulatory front.

4 p.m. – Exclusive Exhibit Time

7 p.m. – Nuts and Bolts: Free, Cheap Tools for Remote Monitoring

Tim Wright, Cumulus

In today’s broadcast environment, we are all being challenged by the reality of loss of engineering talent due to retirement and the lack of young persons interested in making broadcasting a career. This results in fewer people being responsible for more facilities that are spread out over more geographical area. This makes it necessary to remotely monitor the various studio and transmitter sites at a central location. Several commercial products aim to provide this type of service, but also come with the high cost of acquisition, proprietary software, and limited flexibility.

When the Cumulus Chicago facilities were consolidated several years ago, Tim Wright looked for a monitoring solution that could integrate multiple protocols and equipment types including broadcast hardware, building mechanicals, and IT infrastructure. Cheap would be good. Free would be better. He found a free solution. It has evolved and expanded over the years to become what it is today. He can monitor transmitters, STL’s, satellite receivers, automation playback software, IP phone systems, routers, switches, Windows PC’s, Linux PC’s, servers, power strips, Axia nodes, UPS systems, HVAC equipment, building temperatures, and tower lights.

For this Nuts and Bolts session, Tim will be demonstrating a combination of common off-the-shelf hardware and open source software that consists of an influxdb (time series database), SNMP gathering, and manipulating programs, software that converts multiple data protocols to other data protocols, and a web-based GUI for display. Several laptops with the software preloaded will be available for hands-on experience and will be given away as door prizes at the end.

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Wednesday, October 12, 2022

All Sessions are in the Superior Room

8 a.m. – What Do I Need to do at the Transmitter Site?

Jim Leifer, American Tower Corporation

As we learn our new normal in the broadcast space, transmitter site maintenance is even more critical. We will show you some of the latest technologies used for master antenna systems. Do you know how much fuel you have left in the generator? There is always a safety and security aspect of broadcasting sites. Are you using the best solution? What about those tower lights? Who is monitoring them? What is your maintenance schedule for the site? Power failures and roof leaks are more common than you think. There are a lot of different ideas and low-cost solutions to extend the useful life of almost everything at a tower site. What is your plan B? There are many options for TV and radio to maintain operations.
8:45 a.m. – Youth Apprenticeship: A Workforce Planning Solution for Broadcast Technical Professionals
Amelia Phillips, DWD
During this interactive session you will learn about the Wisconsin Youth Apprenticeship (YA) program that for more than 30 years has matched motivated high school students with Wisconsin businesses. In addition, you will be introduced to a new YA Media Broadcast Technician pathway that was developed in collaboration with industry employers and experts. This YA pathway was created to introduce youth into radio and television broadcasting and related fields. Audience participants will be encouraged to engage in a discussion on how this new YA Media Broadcast Technician pathway might be shared with and used by radio and television stations to address some of their workforce planning needs.

9:30 a.m. – Making Radio Accessible with Captions
Bill Bennett, ENCO
Radio has long been for those able to hear, for it to bring value. But for the millions of Americans who are hard of hearing or deaf, they cannot listen to radio’s important breaking news, insightful interviews, meaningful biographies, stories, or even weather. ENCO has been working on a solution for this, by utilizing its award-winning automated speech recognition platform used by countless television and streaming broadcasters and adapting it for radio (an industry ENCO has served for several decades). In this presentation, the audience will learn just how prevalent hearing loss is, and how many potential consumers of radio are lost to its messages. We’ll provide a brand-agnostic illustration of how speech recognition, captions, transcripts, and online and mobile text display methods can make live and pre-recorded radio content useful to a wider audience, while improving your operations workflow too.

10:15 a.m. – Exclusive Exhibit Time, Lunch, and Door Prizes

1:30 p.m. – Tips and Applications for Using Drones and IR Systems
Gary Cavell, Cavell Mertz
Cindy Hutter Cavell, Cavell Mertz
Engineers are discovering new and exciting ways to use drones as diagnostic tools around their radio and TV stations, and find that they can be extremely valuable for investigating a variety of systems and structures. This session will provide tips on drone usage and applications, along with practical examples.

2:15 p.m. – Ransomware Mitigation Strategies
Mike Kelley, E.W. Scripps Company
According to the Verizon Data Breach Investigations report, ransomware attacks increased 13 percent from 2020 and accounted for 25 percent of all breaches reported. No industry is off limits or immune. In our own sector, two major broadcasters were hit with ransomware crippling their operations causing significant losses. This session will explain what ransomware is, how it works and what you should do to mitigate it.

3 p.m. – Break

3:15 p.m. – Radio Propagation: What You Can Learn from Images and Text
Doug Vernier, V-Soft
This presentation will cover the interpretation of unique images produced through radio and TV propagation predictions. We will look at interference-free Longley-Rice, Shadow Depth, ATSC 3.0, PTP, COST-231/Hata, Okumura, and others.
4 p.m. – Remote Production Workflows, Advantages, and Opportunities

*Arco Groenenberg, LiveU*

*Luis Muñoz, LiveU*

Traditional in-house productions involve technologies like tally, genlock, camera control, and producer-to-camera operator communications that are simple to implement in most studios and even stadiums via cable or wireless connections. LiveU will show how all these technologies can be replicated for remote productions via a number of LiveU products and integrated technologies. Learn how this workflow can streamline operations and enhance your live content.

4:45 p.m. – Digital DC Update – Broadcast Technology and a Dash of Policy

*Sam Matheny, NAB*

At the intersection of engineering and business, this session will highlight the many different technologies, trends, and related policies that the broadcast industry faces. It will focus on broadcast technology and broadcaster innovation as it relates to the traditional business and new and emerging competition and opportunity for radio, television, and digital operations. From all-digital radio to NextGen TV to streaming and data strategies, there will be a little bit of everything for the inquisitive engineer.

6 p.m. – SBE Meeting – War Stories

*Jeff Welton, Nautel*

This should be a lively one. We'll throw up some shots of the “best of the worst.” It's stuff that has been encountered in the wild and that could “use a bit of TLC.” Hopefully we'll be able to collectively come up with ideas and thoughts on how to improve facilities without breaking the budget in the process – because we all know that budgets typically aren’t getting a lot bigger! These days, with fewer people carrying more responsibilities, it's easy for radio station temporary to become the norm, rather than the exception. Sometimes, that might be acceptable, others it’s definitely not. So, let's have some fun discussing some of our war stories and what we learned from them.

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**Thursday, October 13, 2022**

**All Sessions are in the Superior Room**

8:30 a.m. – Going 3.0

*Aldrik Coispel, Enensys Teamcast*

Follow the journey of a public TV station transitioning from ATSC 1.0 to 3.0. The speaker will discuss the reasons behind the transition, the challenges that it implies, and the opportunity that it creates.

9:15 a.m. – ATSC 3.0 with MMT Mobility

*Jason Justman, ATSC 3.0 Technology Development and Solutions*

Convergence of broadcast and broadband services by leveraging IP Multicast is an incredibly powerful aspect of the ATSC 3.0 ecosystem. But why did the TG3 adopt two different media streaming transport protocols – ROUTE/DASH and MMT (MPEG Media Transport) – essentially both designed to deliver real-time content to receiver devices?

This presentation provides real-world research and observations in evaluating ATSC 3.0 mobility. Limitations of the ROUTE/DASH transport and packaging format prevent suitable experiences for live linear content on mobility device reception. By demonstrating the features of MMT – specifically, robust depacketization, media-fragmentation aware transport, and sparse media tracks across varying physical layer pipes – it will be shown the potential of delivering robust and reliable live linear content via ATSC 3.0 and IP multicast to the next generation of mobile handset devices and mobility receivers.
10 a.m. – Break

10:15 a.m. – Transitioning to IP Platforms for Broadcast

Steve Wynn, Sony

This presentation will offer background and commentary on infrastructure changes currently underway for broadcast and production facilities as core systems move to fully IP operation. Broadcast systems are moving away from point-to-point serial digital connections (SDI) to fully networked, standards driven IP interconnects, and legacy production tools are adapting and expanding to optimize a newfound flexibility. We'll explore in this session some practical tools, emerging techniques, and planning tips for the new IP-centric production platforms likely to be a part of the next updates to broadcast facilities.

11 a.m. – Understanding and Launching an ATSC 3.0 Market

Tom Mikkelsen, BitPath

During this presentation we will review a variety of related topics. Our goal will provide the audience a better understanding of the benefits of ATSC 3.0 services and high-level advantages to broadcasters. We will explore the current “Lighthouse” concept of sharing services among local broadcasters and the building blocks of implementation covering, along with hosting agreements as well as market, technical and connectivity planning. Additionally, we will review the “nuts and bolts” of the equipment required to implement an ATSC 3.0 host in a given market. We will review generic budgetary equipment costs including the status of the industry related to ATSC 3.0 market progress in U.S. cities. Our presentation will close with an update on consumer devices and current public/PR communications activities related to NextGen television.

11:45 a.m. – Lunch

12:45 p.m. – ATSC 3.0 and Datacasting – A Lucrative New Revenue Source for Broadcasters

Ralph Bachofen, Triveni

ATSC 3.0 is driving new revenues for broadcasters by enabling the delivery of innovative datacasting applications. This session will provide a high-level technology overview of the ATSC 3.0 environment and insights into the various datacasting applications. Attendees will learn about the wealth of datacasting possibilities available in the ATSC 3.0 environment, along with data delivery optimization strategies and lessons from real-world examples.

1:30 p.m. – ATSC 3.0 System Architecture and IP Considerations

Mike Schmidt, Heartland Video Systems

Go over the ATSC 3.0 system design and IP considerations. We will also detail some of the decisions needed and how that impacts the design.

2:15 p.m. – Dynamic Resolution Encoding (DRE) and ATSC 3.0

Jing Zhou, Harmonic

ATSC 3.0 standard enables broadcasters to send higher quality signals than ever before with features like 4K UHD Resolution. However, almost all existing commercial deployments were launched only in 1080P or 720P. Launching 4K not only requires more bit rates, but also takes up more system resources, and thus presents both technical and financial challenges. This is exactly the problem Dynamic Resolution Encoding (DRE) can help you solve. DRE Technology is based on machine learning (ML) mechanism that learns how to pick the best resolution to be encoded in a supervised learning environment. At run time, using the already existing pre-processing stage, the live encoder can decide on the best resolution to encode, without adding any processing complexity or delay. This results in higher quality of experience (QoE), lower bitrate, as well as smaller CPU footprint versus a classical fixed ladder approach.

During this session, we will take a deep dive into Dynamic Resolution Encoding (DRE) and how to transfer this new technology into an incredibly powerful weapon that will work for you.
Ralph Bachofen, Triveni
Ralph Bachofen brings more than 20 years of experience in voice and multimedia over internet protocol (IP), telecommunications, and the semiconductor business to his role as Vice President of Triveni Digital’s marketing and sales group. Bachofen is an expert in the role of metadata in the effective provisioning and monitoring of DTV services in ATSC 1.0 and ATSC 3.0 infrastructures. Bachofen joined Triveni Digital from Conexant Systems, a semiconductor company driving broadband communications for the digital home. As Conexant Systems’ manager of product marketing, he led the worldwide DSL customer premises equipment (CPE) semiconductor products efforts. His professional career also includes senior technical and marketing roles at Siemens and Accelerated Networks. Bachofen’s education includes an executive master of business administration and a bachelor of science in telecommunications technologies. Bachofen is a frequent speaker on the topic of test and measurement strategies, advanced broadcast platforms, and mobile DTV delivery, at a variety of industry conferences including the Broadcasting Engineering Conference at the NAB Show, BroadcastAsia Conference, the Caribbean Cable and Telecommunications Association, and the SCTE.

Bill Bennett, ENCO
A media and entertainment industry veteran, Bill serves ENCO’s customers in myriad of ways, ranging from application engineering and product evangelism, to conceiving and planning new product designs and trial POC’s, to managing key ENCO Accounts and partnerships. He also produces ENCO’s webinars and launched their video production initiative and studios. He joined ENCO after a sales engineering role with German broadcast manufacturer LAWO AG. Previously, he oversaw Olympic venue technical build-out and operations for five Olympic Games, exercised the right-brain as an executive producer and new media business development executive at QVC (inventing groundbreaking ITV and OTT ecommerce products), was a long-time freelance broadcast engineer, consultant and project manager for customers spanning the NBA, NHL, NFL, NCAA, and countless US broadcasts, and owned a laser display production company (where he got to play with really BIG lasers).

Gary Cavell, Cavell Mertz
Gary Cavell has been in the broadcast business for more than 47 years, and spearheaded his company’s efforts to develop and utilize drone platforms and IR technology for RF system investigations. Gary was the recipient of the 2019 NAB Engineering Achievement Award for Radio, and the 2019 IEEE BTS Jules Cohen Award for Outstanding Broadcast Engineering. Gary was the Editor-in-Chief for the 11th edition of the NAB Engineering Handbook, has served for more than 20 years as faculty member for the NAB Leadership Foundation, and is a frequent invited speaker on broadcast technology. He is an SBE member, a Certified Master Thermographer, holds FAA instrument pilot and Drone Pilot’s licenses. He also is a Life Member of IEEE and SMPTE, and is a Past President of the IEEE Broadcast Technology Society.

Arco Groenenberg, LiveU
Arco Groenenberg is a global sales leader with more than 20 years of experience growing businesses and driving results across continents and industries including IT, software, and cloud technologies. Arco demonstrates a proven track record of success spearheading strategic growth initiatives and maintaining long-term client and partner relationships. Arco is a coach, mentor, advisor to colleagues, partners, friends, and clients.

Aldrik Coispel, Enensys Teamcast
Aldrik has been a telecommunication engineer and system architect for Enensys since 2019.
Jim Hammond, Radio.Cloud
Starting as a percussion music major in college, Jim quickly found his passion in broadcasting and has never looked back. Since that time, he has built and managed radio stations, taught broadcasting in high school and trained broadcasters on five continents.
Prior to joining Radio.Cloud, Jim has worked for some of the leading broadcast automated playout systems in the business. With that depth of knowledge and reputation in the broadcast industry, Jim is charting the course for Radio.Cloud in North America.

Kirk Harnack, Telos Alliance
Kirk Harnack, CBNE, CBRE, brings more than 40 years of hands-on experience in broadcast engineering and education to his position as Senior Solutions Consultant at the Telos Alliance. His expertise in putting technology to work in broadcast facilities has driven notable expansion in Audio over IP, VoIP for broadcast, audio processing, and virtualized technology adoption by content creators.
Kirk maintains an active, hands-on role in broadcast engineering through his positions as a partner and VP-Engineering of South Seas Broadcasting, Inc., Delta Radio, LLC, and Kaua’i Broadcast Partners, totaling 14 AM and FM radio stations. He is a Broadcast Meteorologist (WSMV, Nashville), fixed-wing private pilot, FAA Part 107 SUAS pilot, and licensed General Class Amateur Radio operator (KD5FYD). He is a member of the Board of Directors of the Society of Broadcast Engineers, and is Program Chair of SBE Chapter 103 in Nashville.
Kirk founded and hosts the Internet video netcast, “This Week in Radio Tech” or “TWiRT”. This 1-hour weekly video netcast, features regular contributors and guests from the world of radio engineering.

Cindy Hutter Cavell, Cavell Mertz
Cindy Hutter Cavell is an industry award-winning expert who has been working in the television and cable industries for 44 years. She is presently working as the senior broadcast engineering consultant for the FCC’s Fund Administrator for the 600MHz TV-band Relocation Project. She also served as Director of Engineering for the 2GHz Relocation Project.
In a prior life, Cindy was an engineering VP for several TV stations including Hearst/Argyle Television, Gannett (now TEGNA) television, and Fox Television. She also served as VP and general manager of the Fox Sports Networks Houston Playout facility. Her career includes several years with ABC and NBC News traveling internationally as an on-location tech lead.
Cindy was the 2019 winner of the NAB Engineering Achievement Award in Television, the first woman to be so honored. She was also the recipient of the 2021 Broadcasting & Cable Technology Leadership Award and was the 2015 winner of the TV News-Check Women in Technology Leadership Award.

Jason Justman
As a former Distinguished Engineer at Sinclair Broadcast Group/ONEMedia 3.0, and now focused on providing international ATSC 3.0 consultancy, Jason Justman is focused on developing NextGen Broadcast Software and Hardware solutions.
With an objective of enabling NextGen capabilities by leveraging the world’s first open-source ATSC 3.0 software ecosystem - libatsc3, he has proven the on mobile-first content experiences along with cloud-based solutions, delivering on the promise of convergence with OTA, OTT, and digital ecosystems.
With more than 20 years in startup environments, Jason has helped deliver groundbreaking innovative high quality, end-to-end software and hardware systems for Disney, Toyota, Lexus, Accenture, and Fiat.
A serial entrepreneur at heart, with skills in startup principles and on-the-shoulders of giants thinking, he is focused on transforming ideas into results. Jason is a graduate of Michigan State University with a B.S. in computer science and B.A. in telecommunications.

Mike Kelley, E.W Scripps
Mike Kelley is the Chief Information Security Officer for The E.W. Scripps Company, a broadcast media company headquartered in Cincinnati, Ohio. As the company’s first CISO, Mike is the principal advisor to senior leadership on Information security and is responsible for managing the information security function from the development of strategy through day-to-day operations. His previous role was Senior Manager of Global Information Security, Risk Management and Compliance at Dana Limited, a Fortune 500 company, where he led an enterprise level initiative to modernize the information security program. Over a three-year period, Mike implemented an enterprise IT risk management program that served as the foundation for IT strategy and transformed the cybersecurity program to align with industry standards over a three-year roadmap. He began his career with KPMG LLP as an information risk management associate providing internal and external audit consulting for clients in the restaurant,
banking, insurance, and healthcare industries.

Mike has over a decade of experience that includes internal/external audit consulting, risk management advisory, privacy assessments, and information security program implementation. He is deeply involved in the information security industry serving as treasurer for the regional Cloud Security Alliance chapter, serving as a governing body member on CISO Executive Summits, speaking at numerous professional networking forums, lecturing on topics of his profession at universities, and is actively engaged in the local ISSA chapter.

David Layer, NAB

David Layer is vice president, advanced engineering in NAB's Technology Department and in his 27th year at NAB. Educated as an electrical engineer at the University of Maryland and Purdue University in Indiana, David worked as a hardware designer for COMSAT Laboratories in the earlier part of his career, focusing on digital communications technologies for geosynchronous satellites. When radio broadcasting started going digital in the latter part of the 1990s, David was hired by NAB to apply his digital communications expertise to the testing and standardization of broadcast radio technologies including digital audio broadcasting and data transmission over digital FM subcarriers. As an administrator of the National Radio Systems Committee (NRSC, co-sponsored by NAB and the Consumer Technology Association), David participated in the evaluation of the HD Radio system which would be adopted by the FCC in 2002 as the digital radio standard for the US.

These days, David's principal responsibilities include serving as a project manager for technology projects being conducted by PILOT (NAB's innovation initiative), and as principal administrator of the NAB Radio Technology Committee, a group of technical executives from NAB member companies that advises NAB on technology development and technical regulatory matters. David is actively involved in NAB's technical conference planning and technical publication activities, and has been an author and contributing author for numerous technical publications, including IEEE Spectrum magazine (a leading journal of the Electrical Engineering profession), the McGraw-Hill Yearbook of Science and Technology, and the 9th, 10th and 11th editions of the NAB Engineering Handbook. David is an occasional author of NAB's Broadcast Blog covering timely radio and TV broadcasting-related technical topics. Currently, David is the chairman of the RadioDNS Steering Board and is the NAB representative to the RDS Forum. He is also vice-chair of the North American Broadcasters Association (NABA) Radio Committee. David is a senior member of the IEEE and is active in the IEEE Broadcast Technology Society (BTS), where he's served multiple terms as a board member on the administrative committee, is a distinguished lecturer, and has been the chair or co-chair of numerous annual IEEE Broadcast Symposia (most recently in 2017). David is a member of the Association of Federal Communications Consulting Engineers (AFCCE) where he is a past board member and past chair of the AFCCE Scholarship Committee.

David was the recipient of Radio World's 2015 Excellence in Engineering Award and was recognized by Radio Ink Magazine in November 2010 as among the top ten best engineers in radio. In 2014 David received the Consumer Electronics Association Technology Leadership Award. The IEEE BTS awarded David the Matti Siukola Memorial Award for the Best Paper of both the 2014 and 2018 IEEE Broadcast Symposia.

Jim Leifer

Jim Leifer has been in the broadcast field for more than 30 years. He has worked for TV, radio, and data center companies and is now working for American Tower as their Director of Broadcast Operation and Engineering. Jim is an SBE Fellow and holds a CPBE certification. He is also a Senior Member of the IEEE and has membership with the AFCCE and SMPTE. Jim was the President of the Society of Broadcast Engineers from 2017-2019. He has served the broadcast engineering community for the last two decades. Jim has built and operated hundreds of broadcast facilities nationwide. He currently leads a team to manage the day-to-day operations at more than 500 broadcast sites. His team works with broadcasters to innovate and maintain sites across the country. Jim has been married to his wife Jill for 29 years and has four children.

Sam Matheny, NAB

Sam Matheny is Executive Vice President and Chief Technology Officer at the National Association of Broadcasters. With more than 25 years of experience in the broadcast and data networking industries, including earning a patent for inventing mobile and interactive DTV technologies, Sam leads NAB's Technology team in its efforts to promote innovation and propel broadcast technology into the future. He also provides overall leadership for PILOT as well as NAB's TV, Radio, Digital Officer, and Cybersecurity Committees.

Sam is a member of the Academy of Digital Television Pioneers, serves on the board of the Ultra HD Forum, the board of governors for the National Wireless Safety Alliance, the board of visitors for East Carolina University, is an executive in residence with Progress Partners and is a visiting fellow with the German Marshall Fund, where he co-chairs the Future of Democracy Working Group. He has served as an advisor to numerous startup and technology companies and is currently engaged with Reveal Mobile, a location-based advertising technology
company, and Haystack TV, a personalized OTT headline news channel. He has previously served on the FCC Communications Security, Reliability and Interoperability Council (CSRIC), the Federal Emergency Management Agency’s (FEMA) Integrated Public Alert Warning System Network Advisory Council (IPAWS NAC), and the board of directors for the Advanced Television Systems Committee (ATSC) where he was chairman of the special task group on the next generation of digital television. Sam holds a B.S. in Communications from East Carolina University, an M.S. in Technology Management from North Carolina State University and a certificate for artificial intelligence and business strategy from the Massachusetts Institute of Technology. In 2007, he was named an American Marshall Memorial Fellow.

Tom Mikkelsen, BitPath

Tom Mikkelsen is a senior engineering; operations and project management executive focused on making organizations operate more effectively, leading productive and successful teams. He is currently Chief Transition Director with BitPath, LLC a consortium owned by Sinclair and Nexstar focused on the conversion and transition of current television stations and markets to NextGen Television or ATSC 3.0. He has currently led the advanced technology conversion of 45 ATSC 3.0 television markets for BitPath and targeting over 50 markets by the end of 2022. Prior to BitPath he was a Principal at National TeleConsultants in Glendale, California where he was actively involved with major network, satellite, and cable providers in a variety of complex and advanced technology projects. Mikkelsen also served as CTO for Encompass Digital Media-LA, and during his work there he led teams that launched 37 cable networks in less than 24 months. During his career he has held senior positions with leading organizations such as Qualcomm for the implementation of MediaFLO as well as Starz Encore, Comcast/AT&T/ TCI, CycleSat, including several major market television stations. Mikkelsen holds a BSE degree in Industrial Management, an FCC General Class Commercial License and holds patent in related to Media Distribution. He is a SMPTE Life Fellow and active in the Society as well as other professional associations including SBE, SCTE, IEEE, SSPI and STE.

Luis Muñoz, LiveU

A 25-year production veteran, Luis Muñoz, has been at LiveU as a sales engineer for more than three years. Luis is proficient in master control automation, media asset management, and news production workflows. Prior to joining LiveU, Luis held similar positions at Pebble Beach Systems, Avid Technology, and The Video Group. In his spare time, Luis enjoys woodworking, watching and attending sports events and spending time with family.

Mike Pappas, Orban Labs

Mike Pappas’ technical experience spans several decades, including roles in broadcast engineering, government communications, and railway communications. Mike joined DaySequerra in 2015 as VP of Business Development and has assisted this forward-thinking and progressive company in the development of new products, new markets, and new business opportunities. In 2016, DaySequerra acquired Orban Labs, Inc., one of the broadcast industry’s best-known names in audio processing. Mike has been heavily involved in Orban Labs since the acquisition, helping to steer the development and market opportunities for a dozen new products. He has installed all of Orban’s beta sites for the new XPN-AM audio processor and has developed specialized field testing methodology for MDCL operations at different AMC levels. Mike is proud to be part of this revitalization of Orban as it again leads the way in audio processing for radio, TV, and internet streaming.

Amy Phillips, DWD

For the past 10 years, Amy has been with the Wisconsin Youth Apprenticeship (YA) Program. Her primary duties include leading the modernization of YA occupational area pathways, serving on the annual YA grants review team, providing continuous program support services for the statewide YA consortiums, and delivering outreach and customer service for Wisconsin YA regional consortium coordinators, employers, school districts, students, parents, and other workforce community partners. Amy has been with the Department of Workforce Development since 1994. She has more than 30 years of experience in analyzing, interpreting, and monitoring workforce programs for productive outcomes and compliance with state and federal legislation, as well as agency and program administrative rules and regulations. While at DWD, Amy has staffed several key state and department councils, including the Business, Marketing & Information Technology (BM&IT) State Superintendent Advisory Council, Wisconsin Council on Workforce Investment, Wisconsin Labor-Management Council, Wisconsin Occupational Information Coordinating Council, and DWD Diversity Council. She also co-chaired the Wisconsin Manufacturing Skill Standards Certification (MSSC) state team.
Mike Schmidt, Heartland Video Systems
Mike Schmidt is a Senior Systems Engineer specializing in ATSC 3.0 Broadcasting at Heartland Video Systems, Inc. He is responsible for building out the HVS ATSC 3.0 lab, designing the 3.0 systems during the sales process, guiding HVS customers thru 3.0 market launches to include setup, testing, installation, commissioning, ModCod development, and training the customers on the actual equipment. Mike and HVS have been involved in more than 40 ATSC 3.0 market launches throughout the U.S. Mike also works with manufacturers and other entities on additional technologies integral to ATSC 3.0, and using the HVS 3.0 lab to make sure new configurations and technologies work before implementing them into on-air customer systems. Mike’s background includes 20 years at HVS, mainly in encoding and PSIP equipment. Earlier in his career, Mike was in the U.S. Navy and was involved with the satellite communications field at L3 Communications.

Nicole Starrett, Dielectric
Nicole has been with Dielectric since May 2014, after receiving dual bachelor’s degrees in electrical engineering and mathematics from the University of Maine. Her work at Dielectric has been focused on research and development of new antenna technology, creating innovative tools for antenna design, and supervising antenna testing for the broadcast re-pack.

Roger Strand, Wisconsin ECB
Roger was the Northern Wisconsin Regional Manager for the Wisconsin Educational Communications Board. He retired in 2009 but continues to consult with ECB for electrical design engineering. He was also project manager for Pieper Electric, Inc. until he retired in 2018. He continues to serve as a project manager consultant for electrical design engineering for Cooper Engineering.

Nick vanHaaster, GatesAir
Nick VanHaaster has worked on both the operator and vendor side of the industry for more than 20 years. GatesAir has the longest history of providing products that are all designed and manufactured in the U.S.A. since 1922. The factory is in Quincy, Illinois. Nick is passionate about providing the right solution that fits your business requirements from both a technical and financial perspective.

Doug Vernier, V-Soft
Doug is president of V-Soft Communications and senior consulting engineer at Doug Vernier, Telecommunications Consultants. V-Soft is a broadcast engineering software development company supporting radio and TV engineering professionals, FCC, and station engineers. Vernier served for seven years as the principal consulting engineer for the Corporation for Public Broadcasting’s digital radio conversion grant program during which time he helped public radio stations convert to HD radio. He has provided his services as a broadcast consulting engineering for clients across the U.S. while authoring numerous papers, including the chapters on radio propagation in the 10th and 11th edition National Association of Broadcasters Engineering Handbook. Doug is a founding member of the Board of Directors of the Association of Public Radio Engineers (APRE). In 2011, he was awarded the APRE Engineering Achievement award of the year. He is recognized by the Society of Broadcast engineers as a ‘lifetime’ Professional Broadcast Engineer. Doug served two terms on the Board of Directors of National Public Radio and is a past president of Public Radio in Mid America. He took early retirement in 2002 from the University of Northern Iowa where he served for three decades as Director of Broadcasting Services. He has degrees from the University of Michigan where he studied engineering and communications.

Jeff Welton, Nautel
Jeff Welton has worked with Nautel for more than 30 years. He is currently the Nautel Sales Manager for U.S. Central Region. Previously he spent 16.5 years as a Nautel Customer Service Technician, was involved in the 2015 MA3 field tests with NAB Labs and has performed hundreds of transmitter site visits and field calls. Jeff has been recognized with the 2020 NAB Radio Engineering Achievement Award; 2019 APRE Engineering Achievement Award; and 2018 SBE Educator of the Year Award. He’s also contributed to the most recent edition of the NAB Engineering Handbook, including authoring the chapter on Facility Grounding and performs several presentations a year on topics relevant to broadcast engineering.
Tim Wright, Cumulus
Tim is Senior Engineer at Cumulus Media, Chicago for WLS-AM, WLS-FM, and WKQK-FM. He has more than 40 years of broadcast experience including Send International in Alaska, CBS/Infinity in Chicago, Clear Channel/iHeart in Chicago, and currently Cumulus. Tim has extensive experience in both analog and AOIP studio equipment, multiple automation systems, high power RF, Directional AM, and IT. He is a Lifetime Certified Professional Broadcast Engineer with the SBE and holds an Amateur Extra Class license (AL7DS). When not holding down the fort at the radio ranch, he enjoys restoring antiques ranging from farm tractors, to cars, to old HP and Tektronix test equipment.

Steve Wynn, Sony
Steve Wynn is currently a Senior Solutions Architect for Sony Imaging Products and Solutions, specializing in emerging technologies such as broadcast IP infrastructure, cloud media workflows, and advanced systems.
Following an initial run of more than 14 years at Sony, Steve spent time as Director of Engineering for Atlantic Video, a live television production facility in Washington, DC followed by more than seven years at PBS as Director of Engineering for its Media Operations Center, before returning to Sony in 2016 to continue work in the area of advanced systems and media applications.
Steve has written for industry trade publications as well publishing in the SMPTE (Society of Motion Picture and Television Engineers) Journal on the application of MXF standards and applied systems. In addition, he has presented on various aspects of emerging technologies at conferences including SMPTE, NABA, and SBE and has served as a Section Manager for the Washington DC SMPTE Chapter.

Jing Zhou, Harmonic
As the ATSC Solutions Manager at Harmonic, Jing Zhou leads the company’s go-to-market strategy for ATSC solutions. An expert in ATSC technology, Jing drives the company’s definition of key ATSC-related product requirements, positioning and competitive analysis, helping Harmonic build a unique vision for the broadcast market. Jing is also responsible for promoting market awareness and adoption of ATSC technologies.
Zhou has more than 17 years of experience in broadcast engineering and IT technology planning, project management, systems design, acceptance testing, and user training. His tenure includes 11 years at Discovery where he managed global Automation Playout systems and business continuity planning, and four years at Encoding Manufacturers where he led various solution trials, managed complex projects, and developed technical strategies.
Jing holds a Bachelor of Science degree in Electrical Engineering from University of California, San Diego.

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Wisconsin Broadcasters Clinic Committee
Save the Dates

June 14, 2023 • WBA Engineering Day
~In Conjunction with the Summer Conference~

November 10-12, 2023 • WBA Broadcasters Clinic